

Tiama:

TRACEABILITY TO MAKE EVERY CONTAINER INDIVIDUAL AND UNIQUE

Tiama is continuing to provide container glass manufacturers with the solutions they need to keep pace with the ongoing evolution that covers a series of aspects such as quality – of course – but also regarding issues such as counterfeiting. And these solutions are, in fact, a further step towards Smart Factories.





Tiama TRACEABILITY systems

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The industrial world of glass is quickly evolving just like the needs of glassmakers, bottlers and final consumers.

Today, traceability counts as one of the growing challenges, and the requested level of quality keeps increasing.

Counterfeiting, distribution channels control, returnable loops, marketing needs and consumer safety are topics pushing the beverage industry to rethink its strategy of the global process, from the glassmaker to the consumer.

In order to satisfy this need, the glass industry is providing three solutions:

1. Cold-end marking, which is a

limited solution to add a serial number on the container but it can damage the glass and affect the pressure resistance of the container. Plus, it has no value for glassmakers.

2. Hot-end marking with alphanumeric digits improves quality and process management, but this kind of code is not readable automatically and no longer responds to bottlers' requests.

3. 10 years ago, Tiama decided, as the pioneer, to develop datamatrix encoding at the hot-end. This code presents many advantages as it is unique, secure, redundant and resistant on every container and remains all along the product life cycle, from the gob to the final consumer.

Individual container traceability will drastically shake up the way of managing containers and their contents. It enables to trace the origin of a bottle at any time, while providing information such as the exact time of production at the hot-end, cavity number, line number and even more.

HOT-END LASER ENGRAVING

Total Tracer is Tiama's machine placed at the hot-end to engrave this unique code on every container produced. Thanks to its CO2 laser, accuracy of engraving on a very small area of glass allows very high quality of engraving, with a level of precision that prevents counterfeiting. Indeed, it is easy to add a fake code on the glass once the bottle is on the market, but impossible to obtain the same quality compared to what we are doing at 500°C or more.

A standard matrix is a 16-column per 16 lines, 8mm x 8mm square, and offers 24 numerical digits encoded.

It is almost invisible and can be placed on several locations such as heel or neck.

Tiama offers the opportunity to encode additional information such as plant number, GS1 ID or any internal data that could be useful for tracing.

Total Tracer can also engrave a combination of datamatrix and





digits, to have additional readable information for operators.

Thanks to a patented principle, the device is synchronized with the IS forming machine, and allows to engrave an indestructible code which becomes the DNA of each container.

They are now all different and can be recognized among millions.

Every type of production can be engraved: spirit, wine and champagne bottles, jars, beer bottles...and even odd shaped articles thanks to the recognition algorithm.

Another advantage of the Total Tracer is the autofocus patented device that allows +/-15mm misalignment of articles on the conveyor, avoiding the need to touch articles to realign them and create defects.

With all that information encoded in a small engraving, traditional dots on the heel or on the bottom will become obsolete. This will allow glassmakers to save time and money on mould maintenance.

Thanks to Tiama's experience at the hot-end, and its laser expertise, speed has been improved over the past years and can now reach 750bpm to cover all IS configurations.

AUTOMATIC READING AT THE COLD-END

Once the datamatrix code is engraved on a container, it will remain forever, and reading the encoded information can be done everywhere along the process. The Tiama reader range offers different possibilities to read this code.

Installed in the TIAMA carousel machine, the CDR (carousel datamatrix reader) is a camera able to read and link the mould number to the defect caught by other sensors.

The TDR (Top Datamatrix Reader) is an in-line reader with-



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out contact with the container, that can be installed as a standalone system (useful for recall for example) or paired to the MCAL4/MULTI4 (latest generation of sidewall and finish base with mould number reader inspection machines), also allowing the link between mould number and defect.

Customer reclaims can cost a lot, and to find out which bottle is defected amongst hundreds of pallets, can be a huge challenge and take time and money.

A critical defect is the worst that can happen to a glassmaker and being sure that production is clean is a priority. TIAMA readers give glassmakers the opportunity to reject containers depending on time stamp, cavity number, and all data included in the code.

FILLING LINE INTEREST

The bottling industry has also understood the value of these solutions and the benefits they can have with datamatrix engraving. Traceability does not stop after the glass plant. This unique code can also be used further in the process. The possibility to read the datamatrix code before filling is an example of what TIAMA can ensure with the in-line reader, or with specific studies of our engineering department. Bottling companies will also be able to add new information corresponding to their processes.

As the datamatrix code is a unique ID, they will have the possibility to trace every beverage in every single container, and even to count every refill of returnable bottles using a TIAMA in-line reader and a database.

AN INNOVATIVE APP TO READ DATAMATRIX CODES EVERYWHERE, AT ANY TIME

Tiama has created a very innovative app that will be available in a few weeks. So far, there

were several apps on the market allowing users to read QR codes or datamatrix codes on various materials, but usually not on glass.

Thanks to its experience, Tiama has developed an advanced algorithm enabling anyone with a smartphone to read a datamatrix code engraved on any glass container, save the readings and share them by email. Although, as Tiama's priority is to keep data safe, internal and confidential data encoded will remain inaccessible if the user does not have a specific access.

ON THE WAY TO THE SMART FACTORY

At glasstec 2018, Tiama launched its concept called YOUiverse, explaining how its five fields of expertise are all necessary to move towards Smart Factories. Monitoring, Inspection, Intelligence and Services are all very important in the Tiama strategy and Traceability is key for the YOUiverse to live.

It is the cornerstone for the digitalization of glass plants.



Thanks to this encoding, defect information and events gathered at hot- and cold ends are correlated to the container, creating a distinct identity for each item.

Tiama provides a complete set of tools and dedicated service contract including preventive maintenance, refurbishment, spare parts, training and more, to offer to customers a turnkey project with a performance commitment. ■



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